

ABSTRACT

The present invention relates to a solid oxide fuel cell for internal reforming of hydrocarbons and carbon dioxide, in particular, to a solid oxide fuel cell in which one side of solid oxide electrolyte (YSZ) is attached to an air electrode ($\text{La}_{0.8}\text{Sr}_{0.2}\text{MnO}_3$) and its other side is attached to a catalyst electrode of Ni-YSZ type or perovskite type metal oxide. The electrochemical conversion system using the solid oxide fuel cell permits the occurrence of internal reforming of hydrocarbons and carbon dioxide concomitantly with the coproduction of a syngas and electricity, and overcomes the shortcomings associated with the catalytic deactivation due to carbon deposition and the high-energy consumption.

15

20

25